

Abstract of the Disclosure

There is provided a speech encoder comprising a first weighting means for performing an error weighting on a speech input. The first weighting means is configured to reduce an error signal resulting from a difference between a first synthesized speech signal and the speech input. In addition, the speech encoder includes a means for generating the first synthesized speech signal from a first excitation signal, and a second weighting means for performing an error weighting on the first synthesized speech signal. The second weighting means is also configured to reduce the error signal resulting from the difference between the speech input and the first synthesized speech signal. There is also included a first difference means for taking the difference between the first synthesized speech signal and the speech input, where the first difference means is configured to produce a first weighted error signal. The speech encoder also includes a means for generating a second synthesized speech signal from a second excitation signal, and a third weighting means for performing an error weighting on the second synthesized speech signal. The third weighting means is configured to reduce a second error signal resulting from the difference between the first weighted error signal and the second synthesized speech signal. Then there is included a second difference means for taking the difference between the second synthesized speech signal and the first error signal, where the second difference means is configured to produce a second weighted error signal. Finally, there is included a feedback means for using the second weighted error signal to control the selection of the first excitation signal, and the selection of the second excitation signal.